

In the Claims

Please replace all prior versions, and listings, of claims in the application with the following list of claims:

1-24. (Canceled)

25. (Previously presented) A method of prioritizing and granting bus access requests in a system that comprises a table of slots assigned to bus masters, wherein the table has a number of slots and one of the slots serves as an access slot, and wherein at least one of the bus masters is assigned to multiple slots in the table, the method comprising:

- (a) granting a bus access request of a bus master asserting a high priority interrupt;
- (b) if no bus master is asserting a high priority interrupt, determining whether a bus master making a bus access request is currently assigned to the access slot in the table, and granting the bus access request of that bus master if it is determined that the bus master is currently assigned to the access slot in the table; and
- (c) if no bus master is asserting the high priority interrupt and no bus master making an access request is assigned to the access slot, granting a bus access request of a bus master highest on a round robin priority list.

26. (Previously presented) The method of claim 25, wherein the step (a) further comprises:

generating the high priority interrupt for a processor operating on a real-time signal when the processor has been in a wait state for a time-out period.

27. (Original) The method of claim 26, wherein the time-out period is programmable.

28. (Previously presented) The method of claim 26, wherein a first bus master is assigned more slots in the table than a second bus master.

29. (Previously presented) The method of claim 26, wherein the step (b) further comprises:

if the bus access request of a bus master assigned the access slot is granted, updating the table so that a different one of the bus master entries in the table is assigned to the access slot.

30. (Previously presented) The method of claim 29, further comprising:

if the bus access request of a bus master highest on the round robin priority list is granted, updating the round robin priority list and also updating the table so that a different one of the bus master entries in the table is assigned to the access slot.

31-39. (Canceled)

40. (Previously presented) The method of claim 29, further comprising a step of:
assigning a number of slots in the table to each bus master based upon the relative bandwidth requirements of the bus masters.

41. (Currently amended) A method for operating a bus arbitration module (BAM) to control ~~controlling~~ access to first and second resources coupled to first and second slave busses ~~a bus~~ by at least first and second bus masters coupled to first and second master busses, ~~respectively~~, comprising:

(A) operating the BAM so as to couple the first and second master busses to the first and second slave busses, respectively, so that the first and second resources can be accessed independently by the first and second bus masters, respectively;

(B) operating the BAM so as to couple the first and second master busses to the second and first slave busses, respectively, so that the second and first resources can be accessed independently by the first and second bus masters, respectively; and

[[a)] (C) operating the BAM ~~controlling access to the bus by the first and second bus masters~~ so that, during periods when all requests for access to the first slave bus ~~by the first and second bus masters~~ are of the same priority level, the first and second bus masters are guaranteed

to have access to first and second respective portions of the available bandwidth of the first slave bus, with the first portion being greater than the second portion.

42. (Currently amended) The method of claim 41, further comprising:

[(b)] (D) when a high priority ~~bus access~~ request to access the first slave bus is received from a bus master, granting that bus master access to ~~the~~ first slave bus prior to granting access to the first slave bus based on simultaneous lower priority bus access requests from other bus masters.

43. (Currently amended) The method of claim 42, wherein the step [[(a)]] (C) further comprises:

controlling access to the first slave bus by the first and second bus masters based on entries in a table comprising a fixed number of slots assigned to bus masters, wherein more slots are assigned to the first bus master than the second bus master.

44. (Currently amended) The method of claim 43, wherein the step [[(a)]] (C) further comprises:

granting a bus master access to the first slave bus if that bus master is assigned to an access slot in the table.

45. (Currently amended) The method of claim 44, wherein the step [[(a)]] (C) further comprises:

updating the table so that a different one of the bus master entries in the table is assigned to the access slot in the table.

46. (Currently amended) The method of claim 45, wherein the step [[(a)]] (C) further comprises:

if no bus master making a ~~bus access~~ request to access the first slave bus is assigned to the access slot in the table, granting a bus master access to the first slave bus based on a current state of a round robin list of priority assignments for bus masters.

47. (Currently amended) The method of claim 44, wherein the step ~~[[a)]~~ (C) further comprises:

if no bus master making a ~~bus-access~~ request to access the first slave bus is assigned to the access slot in the table, granting a bus master access to the first slave bus based on a current state of a round robin list of priority assignments for bus masters.

48. (Currently amended) The method of claim 41, wherein the step ~~[[a)]~~ (C) further comprises:

controlling access to the first slave bus by the first and second bus masters based on entries in a table comprising a fixed number of slots assigned to bus masters, wherein more slots are assigned to the first bus master than the second bus master.

49. (Currently amended) The method of claim 48, wherein the step ~~[[a)]~~ (C) further comprises:

granting a bus master access to the first slave bus if that bus master is assigned to an access slot in the table.

50. (Currently amended) The method of claim 49, wherein the step ~~[[a)]~~ (C) further comprises:

updating the table so that a different one of the bus master entries in the table is assigned to the access slot in the table.

51. (Currently amended) The method of claim 50, wherein the step ~~[[a)]~~ (C) further comprises:

if no bus master making a ~~bus-access~~ request to access the first slave bus is assigned to the access slot in the table, granting a bus master access to the first slave bus based on a current state of a round robin list of priority assignments for bus masters.

52. (Currently amended) The method of claim 49, wherein the step ~~[[a)]~~ (C) further comprises:

if no bus master making a ~~bus access~~ request to access the first slave bus is assigned to the access slot in the table, granting a bus master access to the first slave bus based on a current state of a round robin list of priority assignments for bus masters.

53. (New) The method of claim 41, further comprising a step of:

(D) operating the BAM so that, during periods when all requests for access to the second slave bus by the first and second bus masters are of the same priority level, the first and second bus masters are guaranteed to have access to first and second respective portions of the available bandwidth of the second slave bus, with the second portion being greater than the first portion.